



BILLING CODE 3270-F0

OFFICE OF SCIENCE AND TECHNOLOGY POLICY

Notice of Request for Information on Positioning, Navigation, and Timing Resilience

AGENCY: Office of Science & Technology Policy (OSTP).

ACTION: Notice of request for information (RFI).

SUMMARY: On behalf of the National Science and Technology Council's (NSTC)

Subcommittee on Resilience Science and Technology (SRST), OSTP requests input from all interested parties on the development of a National Research and Development Plan for Positioning, Navigation, and Timing (PNT) Resilience. The plan will focus on the research and development (R&D) and pilot testing needed to develop additional PNT systems and services that are resilient to interference and manipulation and that are not dependent upon global navigation satellite systems (GNSS). The plan will also include approaches to integrate and use multiple PNT services for enhancing resilience. The input received on these topics will assist the Subcommittee in developing recommendations for prioritization of R&D activities.

DATES: Interested persons are invited to submit comments on or before 11:59 pm ET on September 9, 2020. Comments received after this date may not be considered.

ADDRESSES: Responses should be submitted via email to PNTresearch@ostp.eop.gov and include "RFI Response: PNT Resilience" in the subject line of the message.

Instructions: Response to this RFI is voluntary. Respondents need not reply to all questions listed. For all submissions, clearly indicate which questions are being answered. Each individual or organization is requested to submit only one response. Submissions should include the name(s) of the person(s) or organization(s) filing the comment. No other personally identifiable

information, business proprietary information, or copyrighted information should be included. Submissions should not exceed 10 pages in length using 12 point or larger font and should be in plain text, Microsoft Word, or Adobe PDF format. Submissions that cite references, studies, research, and other empirical data that are not widely published should include copies of, or electronic links to, the referenced materials.

In accordance with Federal Acquisition Regulation 15.201(e), “RFIs may be used when the Government does not presently intend to award a contract, but wants to obtain price, delivery, other market information, or capabilities for planning purposes. Responses to these notices are not offers and cannot be accepted by the Government to form a binding contract.” Additionally, the Federal Government will not pay for response preparation or the use of any information contained in the response. Submissions are subject to Freedom of Information Act (FOIA) disclosure and may be posted, without change, on a Federal website.

FOR FURTHER INFORMATION CONTACT: Please direct questions to Adam Balkcum, OSTP at PNTresearch@ostp.eop.gov or 202-456-4444.

SUPPLEMENTARY INFORMATION: PNT has become an “invisible utility” that is integral to and enables a wide array of applications such as financial transactions, synchronization of power networks, and the precision landing approaches of aircraft. PNT services are currently provided or augmented by a number of terrestrial and space-based systems, with the most notable and widely used being the Global Positioning System (GPS). Satellite platforms, such as GPS, provide global coverage but at great distances and with low signal intensity, which can be more easily interfered with at the local level by natural phenomena and by technological means (both intentional and unintentional). On February 12, 2020, President Trump signed Executive Order (EO) 13905, “Strengthening National Resilience Through Responsible Use of Positioning,

Navigation, and Timing Services,” with the goal of ensuring that the Nation’s critical infrastructure can withstand disruption or manipulation of PNT services. EO 13905 directs the development of a national plan for the R&D and pilot testing of additional, robust, and secure PNT services that are not dependent on GNSS. These additional services may consist of multiple systems with varying functional specifications to satisfy one or more applications with differing requirements. To further enhance infrastructure resilience, the plan will also consider approaches to integrate and use multiple PNT services including GNSS services.

Questions to Inform R&D Plan Development

The SRST seeks a better understanding of current PNT efforts and challenges, how PNT services may be used in the future, and what R&D activities could be beneficial for improving overall system resilience. In responding to the questions below, please consider the priority PNT R&D needs specifically directed towards developing resilient, non-GNSS dependent services and equipment, and the role of the Federal government in executing or encouraging the appropriate R&D activities. Resilience is desired in the overall system, which includes sources of PNT, distribution means, augmentation methods, and user equipment. Resilient systems have protections, mitigations, and responses that allow for continued proper system functioning or recovery within an acceptable time period during major disruptions.

1. (a) How will PNT services be used over the next ten years? (b) What values for precision and integrity for non-GNSS dependent systems over the same timeframe will support assured PNT services and why? (c) Similarly, what level of synchronization to Coordinated Universal Time (UTC) is anticipated to be needed?
2. What may affect or prevent the adoption, integration, and operation of resilient PNT services and equipment?

3. (a) What system architectures or concepts could be conducive for PNT system resilience?
(b) What features or capabilities in equipment or systems could provide effective protections or mitigations against interference or manipulation? (c) Which principles of cybersecurity may be leveraged to achieve this? (d) What challenges may occur in integrating and using multiple PNT services within user equipment?
4. What R&D activities are currently being conducted, or planned, to develop non-GNSS dependent PNT services or equipment, or to improve the resilience of PNT services or equipment?
5. (a) What knowledge or capability gaps currently exist that, if filled, could contribute to improving resilience? (b) What R&D activities are best suited to help fill these gaps? (c) What role does the Federal government have to encourage and collaborate on these activities?
6. What additional information or suggestions could help inform the development of the R&D plan?

Thank you for taking the time to respond to this Request for Information. We appreciate your input.

Dated: August 3, 2020.

Sean Bonyun,

Chief of Staff,

The White House Office of Science and Technology Policy.

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